

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 10-326278

(43)Date of publication of application : 08.12.1998

(51)Int.Cl. G06F 17/30
G06T 1/00

(21)Application number : 09-083091 (71)Applicant : MINOLTA CO LTD

(22)Date of filing : 01.04.1997 (72)Inventor : TOO KIMIHIKO

(30)Priority

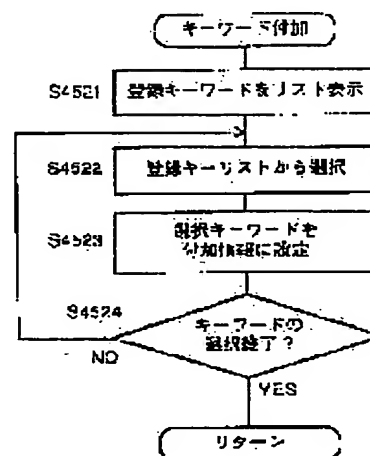
Priority number : 09 75581 Priority date : 27.03.1997 Priority country : JP

(54) PROCESSOR AND METHOD FOR INFORMATION PROCESSING AND RECORDING
MEDIUM FOR INFORMATION PROCESSING PROGRAM

(57)Abstract:

PROBLEM TO BE SOLVED: To automatically set a proper key work corresponding to the contents of image data by selecting a key word according to content classification information and feature quantities of image data and setting this key work as additional information.

SOLUTION: Registered key words are listed and displayed (registered key list) (S4521). A desired key work is selected out of the registered key list displayed on a screen (S4522). The selected key word is set as additional information of image data (S4523). On the basis of a user's input on the screen, it is determined whether or not the adding process for this key word is finished (S4524) and this operation is repeated until the user finishes this process. Therefore, a retrieval key added to an object is set, so the retrieval key corresponding to the contents of the object can be added to the object precisely and automatically.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's
decision of rejection]

[Date of extinction of right]

* NOTICES *

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] In the information processor which saves an object with the additional information used as the retrieval information, and manages it An incorporation means to incorporate the above-mentioned object with the contents classification information that the classification of the contents is expressed, A record means to record the above-mentioned object with the above-mentioned contents classification information, The information processor characterized by having a key decision means to determine the key corresponding to the above-mentioned object, and a key addition means to make the above-mentioned key record on the above-mentioned record means with an object, based on the above-mentioned contents classification information.

[Claim 2] The information processor characterized by having a feature-extraction means to extract the characteristic quantity showing the property of the proper from the above-mentioned object further in an information processor according to claim 1.

[Claim 3] The information processor characterized by having a feature-extraction means to extract the characteristic quantity showing the property of the proper from the above-mentioned object and the above-mentioned contents classification information further in an information processor according to claim 1.

[Claim 4] In the information processor which saves an object with the additional information used as the retrieval information, and manages it An incorporation means to incorporate the above-mentioned object, and an input means to input the contents classification information that the classification of the contents of the above-mentioned object is expressed, A record means to record the above-mentioned object with the above-mentioned contents classification information, The information processor characterized by having a key decision means to determine the key corresponding to the above-mentioned object, and a key addition means to make the above-mentioned key record on the above-mentioned record means with an object, based on the above-mentioned contents classification information.

[Claim 5] The information processor characterized by having a feature-extraction means to extract the characteristic quantity showing the property of the proper from the above-mentioned object further in an information processor according to claim 4.

[Claim 6] In the information processing approach of saving an object with the additional information used as the retrieval information, and managing it The incorporation step which incorporates the above-mentioned object with the contents classification information that the classification of the contents is expressed, The record step which records the above-mentioned object with the above-mentioned contents classification information, The information processing approach characterized by having the key decision step which determines the key corresponding to the above-mentioned object, and the key addition step which makes the above-mentioned key record on the above-mentioned record means with an object based on the above-mentioned contents classification information.

[Claim 7] In the information processing approach of saving an object with the additional information used as the retrieval information, and managing it The incorporation step which incorporates the above-

mentioned object, and the input step which inputs the contents classification information that the classification of the contents of the above-mentioned object is expressed, The record step which records the above-mentioned object with the above-mentioned contents classification information, The information processing approach characterized by having the key decision step which determines the key corresponding to the above-mentioned object, and the key addition step which makes the above-mentioned key record on the above-mentioned record means with an object based on the above-mentioned contents classification information.

[Claim 8] In the medium which memorized the information processing program for saving and managing an object with the additional information used as the retrieval information The incorporation step which incorporates the above-mentioned object with the contents classification information that the classification of the contents is expressed, The record step which records the above-mentioned object with the above-mentioned contents classification information, The record medium characterized by having memorized the information processing program which has the key decision step which determines the key corresponding to the above-mentioned object, and the key addition step which makes the above-mentioned key record on the above-mentioned record means with an object based on the above-mentioned contents classification information.

[Claim 9] In the medium which memorized the information processing program for saving and managing an object with the additional information used as the retrieval information The incorporation step which incorporates the above-mentioned object, and the input step which inputs the contents classification information that the classification of the contents of the above-mentioned object is expressed, The record step which records the above-mentioned object with the above-mentioned contents classification information, The record medium characterized by having memorized the information processing program which has the key decision step which determines the key corresponding to the above-mentioned object, and the key addition step which makes the above-mentioned key record on the above-mentioned record means with an object based on the above-mentioned contents classification information.

[Translation done.]

* NOTICES *

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the record medium which recorded the information processing program on the information processor and the approach list.

[0002]

[Description of the Prior Art] In recent years, development of the information processing field was remarkable, and objects, such as an image and a document, were incorporated and managed [accumulated and] from the input unit, and it searched if needed, and when especially the engine performance of a personal computer etc. improved, by the time image database equipment and electronic filing system equipment which are printed in an output unit spread not only through a business field/specified use but through the general user, they became. The image and document which are processed by such equipment are often drawn up as a file, and data control is carried out. Then, in order to manage image data efficiently, adding specific information to them is known. If the additional information to image data increases, so various retrieval will be attained and retrieval effectiveness will improve. On the other hand, the input/setup of various keys to image data are needed. For example, when there are many numbers of registration of image data, a user needs to consider a key about each image data, for example, needs to register by the keyboard, and becomes a very troublesome activity for a user. For this reason, simplification of a key setup is desired from the former.

[0003] On the other hand, about attribute information, such as the creation date / modification date / file name / file format, adding to image data automatically is performed from the former. Moreover, it calculates from the color data of an image also about a tint, and adding to image data automatically is known. Moreover, addition of the keyword to image data is easy-ized by extracting the characteristic quantity which expresses the property of data proper, such as a configuration about image data, and a color, with the image file management equipment indicated by JP,6-215089,A, distinguishing the characteristic quantity, and enumerating the keywords corresponding to image data automatically.

[0004]

[Problem(s) to be Solved by the Invention] By the way, conventionally which was mentioned above, with equipment, the characteristic quantity extracted from image data is distinguished based on the characteristic quantity about the image data read before it, and the keywords about the image data which has characteristic quantity similar to the characteristic quantity from which the keyword corresponding to it was enumerated namely, extracted are enumerated. For this reason, when there is no thing similar to the characteristic quantity extracted from the image data newly read into the characteristic quantity about the image data read before, the keyword about image data must newly be inputted from input units, such as a keyboard. Moreover, since only the characteristic quantity which shows a color, a configuration, etc. is taken into consideration when enumerating the keywords of image data, the characteristic quantity about image data is similar, but when the object fields differ, the keywords unsuitable for the read image data may be enumerated. For example, like the image data showing an "apple", and the image data showing "**** and ****", although it is similar, in saying that the object

fields differ, when enumerating keywords, even if characteristic quantity (a round shape, red) takes only the above-mentioned characteristic quantity into consideration, it is not enough.

[0005] This invention was made in view of the above-mentioned technical problem, and aims at offering the information processor which sets up automatically the suitable keyword according to the contents of image data.

[0006]

[Means for Solving the Problem] In the information processor which this invention saves an object with the additional information used as the retrieval information, and is managed An incorporation means to incorporate an object with the contents classification information that the classification of the contents is expressed, It is characterized by having a record means to record an object with the above-mentioned contents classification information, a key decision means to determine the key corresponding to an object based on the above-mentioned contents classification information, and a key addition means to make the above-mentioned key record on the above-mentioned record means with an object. Moreover, one gestalt of this invention is characterized by having a feature-extraction means to extract the characteristic quantity showing the property of the proper from the above-mentioned object. Furthermore, other one gestalt of this invention is characterized by having a feature-extraction means to extract the characteristic quantity showing the property of the proper from the above-mentioned object and the above-mentioned contents classification information.

[0007] Moreover, this invention carries out having had an incorporation means incorporate an object, an input means input the contents classification information that the classification of the contents of the object is expressed, a record means record an object with the above-mentioned contents classification information, a key decision means determine the key corresponding to an object based on the above-mentioned contents classification information, and a key addition means make the above-mentioned key record on the above-mentioned record means with an object as the description. One gestalt of this invention is characterized by having a feature-extraction means to extract the characteristic quantity showing the property of the proper from the above-mentioned object.

[0008] Furthermore, this invention saves an object with the additional information used as the retrieval information, and it sets to the information processing approach to manage. The incorporation step which incorporates the above-mentioned object with the contents classification information that the classification of the contents is expressed, The record step which records the above-mentioned object with the above-mentioned contents classification information, It is characterized by having the key decision step which determines the key corresponding to the above-mentioned object, and the key addition step which makes the above-mentioned key record on the above-mentioned record means with an object based on the above-mentioned contents classification information.

[0009] Furthermore, this invention saves an object with the additional information used as the retrieval information, and it sets to the information processing approach to manage. The incorporation step which incorporates the above-mentioned object, and the input step which inputs the contents classification information that the classification of the contents of the above-mentioned object is expressed, The record step which records the above-mentioned object with the above-mentioned contents classification information, It is characterized by having the key decision step which determines the key corresponding to the above-mentioned object, and the key addition step which makes the above-mentioned key record on the above-mentioned record means with an object based on the above-mentioned contents classification information.

[0010] Furthermore, this invention is set to the medium which memorized the information processing program for saving and managing an object with the additional information used as the retrieval information. The incorporation step which incorporates the above-mentioned object with the contents classification information that the classification of the contents is expressed, The record step which records the above-mentioned object with the above-mentioned contents classification information, It is characterized by recording the information processing program which has the key decision step which determines the key corresponding to the above-mentioned object, and the key addition step which makes the above-mentioned key record on the above-mentioned record means with an object based on the

above-mentioned contents classification information.

[0011] Furthermore, this invention is set to the medium which memorized the information processing program for saving and managing an object with the additional information used as the retrieval information. The incorporation step which incorporates the above-mentioned object, and the input step which inputs the contents classification information that the classification of the contents of the above-mentioned object is expressed, The record step which records the above-mentioned object with the above-mentioned contents classification information, It is characterized by recording the information processing program which has the key decision step which determines the key corresponding to the above-mentioned object, and the key addition step which makes the above-mentioned key record on the above-mentioned record means with an object based on the above-mentioned contents classification information. In addition, an "object" means the electronic intelligence which serves as a subject who should be saved and managed by the above-mentioned information processor, for example, a text and image data, the folder which summarized these here.

[0012]

[Embodiment of the Invention] Hereafter, the gestalt of implementation of this invention is explained to a detail based on an accompanying drawing. The information processor of the gestalt of this operation manages the additional information which is one of the image data which is one of the objects, and the attribute information over the image data. That is, the information processor constitutes the database management system (henceforth an "image database") of image data, can add a search key to image data as additional information, and can search image data using this search key. In addition, although there are a keyword showing the description of an image, a color, a graphic form, etc. as a search key used for an image database, a keyword is used with the gestalt of this operation.

[0013] Moreover, the above-mentioned information processor deals with the image data accompanied by the contents classification information that the classification of the contents about the image data is expressed, and performs a setup of a keyword, or a keyword candidate's display automatically based on the contents classification information and the characteristic quantity showing the property of an image data proper. In addition, as the above-mentioned contents classification information, the information described by "contents description (Content description) group" of the attribute group who describes the contents of image data specified in the FlashPix (FlashPix) format which has the various information other than contents information that the contents, such as the name of the title about image data, the purpose, a location, and a material object, are expressed, in an image data file may be used, for example. The configuration and actuation of this information processor are explained below.

[0014] Drawing 1 is the block diagram of the information processor (henceforth a "system") concerning the gestalt of this operation. This system is equipped with arithmetic and program control (henceforth "CPU"), and the control unit 1 (computer) which controls the whole system is constituted as a core. The display 2 which performs the display of an image or an alphabetic character, the display for actuation, etc. in the above-mentioned control device 1, Floppy disk drive 5b which performs the writing and read-out to the keyboard 3 for performing various inputs, directions actuation, etc. and a mouse 4, and floppy disk 5a that memorizes / keeps data, and that is a medium, The hard disk drive unit 6 which memorizes and keeps a lot of image data to which attribute information is added, respectively, The printer 7 which prints an alphabetic character, image data, etc., the scanner 8 for incorporating image data, CD-ROM equipment 9b for reading the data stored in CD-ROM9a, the loudspeaker 10 for voice outputs, and the microphone 11 for voice input are connected.

[0015] Drawing 2 is the block diagram of this system centering on a control device 1. This control unit 1 is constituted considering CPU201 as a core. The data bus 220 connected to CPU201 is minded. The retrieval program concerning this invention ROM203 and the various data to record The display of RAM204 to memorize, an image, or an alphabetic character The display-control circuit 205 performed on a display 2, the keyboard control circuit 206 which carries out transfer control of the input from a keyboard 3, the mouse control circuit 207 which carries out transfer control of the input from a mouse 4, the floppy disk drive control circuit 208 which controls floppy disk drive 5b, A hard disk drive unit 6 The output to the hard disk control circuit 209 and printer 7 to control the printer control circuit 210 to

control, the scanner control circuit 211 which controls a scanner 8, the CD-ROM drive control circuit 212 which controls CD-ROM drive 9b, and the loudspeaker control section 213 which controls the voice output to a loudspeaker 10 -- and The microphone control circuit 214 which controls a microphone 11 is connected, respectively. Moreover, the expansion slot 215 for the clock 202 for generating a reference clock required operating this system being connected, and connecting various add-in boards through a data bus 220 further is connected to CPU201. In addition, a SCSI board may be connected to an expansion slot 215, and floppy disk drive 5b, a hard disk drive unit 6, a scanner 8, CD-ROM drive 9b, etc. may be connected through this SCSI board.

[0016] In addition, although floppy disk 5a and a hard disk drive unit 6 are used in this system as a medium which keeps data, other record media, such as a magneto-optic disk, may be used. Moreover, although a scanner 8 and CD-ROM drive 9b are used as image entry-of-data equipment, other input devices, such as a still video camera and a digital camera, may be used. Moreover, although a printer 7 is used as an output unit, other output units, such as a digital copier, may be used.

[0017] In this system, the retrieval program concerning this invention is recorded on ROM203. However, a part or all of this program is kept to the data-logging medium of floppy disk 5a or hard disk drive unit 6 grade, if needed, from a data-logging medium, a program and data may be read to RAM204, and this may be performed. Moreover, although it is inputted into a hard disk drive unit 6 from external input equipment and he is trying to manage the memorized image data in this system, managing directly the image data stored in CD-ROM 9b is also considered. In this case, the index data in which the image data memorized by CD-ROM 9b is shown, and the search key added to this index data are memorized to a hard disk drive unit 6 (the set of this index data and search key is called a "record"). What is necessary is to extract a record as a retrieval result first and just to make it read desired image data from CD-ROM 9b after an appropriate time based on the index data of the extracted record based on the set-up search key at the time of retrieval of image data.

[0018] An example of the setting screen displayed on drawing 3 on a display 2 in connection with program execution in this system is shown. Screen 21 is an initial menu screen displayed at the time of system initiation. The setting screen according to processing is displayed by choosing each selections 23-27 of an initial menu screen. A user performs the input of the set point required for a setup of a mode of operation, registration of data, or registration of a keyword etc. on these setting screens.

[0019] This system has the image database which includes the contents classification information and additional information with image data that image data should be managed. This image database includes various attribute information relevant to image data, such as a "file name" of the "data path" which shows the location on the "index" which is a registration number, the "data name" showing the contents of image data, and the information record medium with which image data is recorded, and image data, and a "keyword" used at the time of retrieval, information on other. Moreover, this system has the key list equipped with various keyword information, and the keyword corresponding to the contents classification information and characteristic quantity of an image is registered here. In addition, these image databases and a key list are recorded on the information record medium of hard disk drive unit 6 grade.

[0020] Hereafter, control processing of this system is explained. Drawing 4 is the flow chart of the main routine of the control processing performed based on the program in which CPU201 was stored in ROM203. If the power source of a system is introduced and a program is started, initialization processes, such as a display of initialization of a variable required of each processing etc. and the initialization screen (refer to drawing 3) to a display 2 top, will be performed first (a "step" is skipped step S1 and the following). Next, it judges whether selection of one of processings was performed on the initial menu screen 21 (S2). Here, when "data registration" 23 are chosen, an image is captured from the picture input device of scanner 8 grade, and data registration processing which adds predetermined information and is registered to a database is performed (S3). Moreover, when "keyword registration" 24 are chosen, keyword registration processing in which the keyword added to image data is registered to a database is performed (S4). "Data retrieval" When 25 is chosen, retrieval processing which searches desired image data from a database is performed (S5). Furthermore, when "data output" 26 are chosen,

data output processing which prints an image is performed by image output units, such as a printer, (S6). Furthermore, when "other menus" is chosen, predetermined processings other than the above-mentioned processing are performed (S7). In addition, in S2, when no menu is chosen, it progresses to other processings (S8) immediately. After other processings are completed by S8, return and the same processing as henceforth [2 / S] are performed repeatedly. In addition, about processing (S7) when the menu of keyword registration processing (S4), retrieval processing (S5), data output processing (S6), and others is chosen, and other processings (S8), it is fundamentally [as the conventional retrieval system] the same, and since it is not directly related to this application, explanation here is omitted. [0021] Drawing 5 is the flow chart of the above-mentioned data registration processing (S3 of drawing 4). Here, processing which writes that by which additional information, such as a keyword, was added to the image data newly inputted from the picture input device of scanner 8 grade or the image data read from CD-ROM9a by CD-ROM drive 9b in a hard disk drive unit 6 as a file of an image database is performed. If this data registration processing is started, it will judge whether the above CPU 201 performs data registration by the mode of operation in automatic key attachment mode first (S31). This automatic key attachment mode is a mode of operation which chooses a keyword automatically, and adds it based on the contents classification information that the classification of the contents of the image is expressed, and the characteristic quantity expressing the property of an image pattern proper, out of the key list beforehand registered into this equipment, or chooses and displays two or more keyword candidates so that a user can choose a keyword from predetermined candidates. In setting the automatic key attachment mode flag which is a flag for a system to judge whether it is automatic key attachment mode when carrying out data registration in automatic key attachment mode, as a result of judging (S32) and not carrying out data registration in automatic key attachment mode, it clears an automatic key attachment mode flag.

[0022] Next, the image data which it is going to process from now on judges what is newly inputted, and the data which has already existed in the database (S34). A user performs this decision based on the input in which it succeeded on the data registration screen through the mouse 4 or the keyboard 3. When newly inputting image data as a result of decision, incorporation processing of the image data which incorporates new image data from the picture input device of scanner 8 grade is performed (S35). About the detail of incorporation processing (S35) of this image data, it mentions later. On the other hand, when image data is the existing data, desired data are chosen out of the existing image data (S36). Here, incorporation or selection of image data is performed by the user through a mouse 4 or keyboard 3 grade on the data registration screen 29.

[0023] Then, based on an automatic key attachment mode flag, it judges whether a mode of operation is automatic key attachment mode. When it is not in automatic key attachment mode, it progresses to S44 and automatic addition of a keyword is not performed. analysis/operation means for image recognition predetermined from image data when the mode of operation is set as automatic key attachment mode -- with, various characteristic quantity is calculated (S38). About a color or a configuration, it is a parameter expressing the property of the proper of image data (specifically a hue, lightness, saturation, a circle / ellipse / polygon-like content, a straight line / curvilinear content, etc.), and in subsequent processings, this characteristic quantity is used in order to presume a keyword.

[0024] Then, it is judged whether it is that to which the contents classification information acquired along with image data at the time of incorporation processing (S35) of image data corresponds to what kind of provisions of classification with reference to the key list which is beforehand registered into the information record medium of for example, hard disk drive unit 6 grade, and was equipped with contents classification information and the keyword information corresponding to characteristic quantity, and it is processed according to each item (S39). In the system concerning the gestalt of this operation, in passing S41 to it in corresponding to provisions of classification B to S40 when three provisions of classification A, B, and C are established and the above-mentioned contents classification information corresponds to provisions of classification A in S39, or corresponding to provisions of classification C, it progresses to S42. In addition, when the above-mentioned contents classification information corresponds to neither of provisions of classification A, B, and C, or when the image data itself does not have contents

classification information, it skips to S44.

[0025] In the above S40, the keyword according to the contents of the image data equipped with the contents classification information applicable to provisions of classification A is automatically chosen from the keyword contained in the above-mentioned key list based on the various characteristic quantity calculated by processing of S38. Similarly, in S41, the keyword according to the contents of the image data equipped with the contents classification information that the keyword according to the contents of the image data equipped with the contents classification information applicable to provisions of classification B corresponds to provisions of classification C in S42 is chosen automatically. For example, characteristic quantity is a color and a configuration and the keywords with provisions of classification A respectively following when fruit/vegetables, and provisions of classification B are [scenery and provisions of classification C] living things are chosen automatically.

[Table 1]

内容分類項目	特徴量(色, 形状)	
	(赤色, 円形状)	(緑色, 棒状)
果物/野菜	りんご	きゅうり
風物	太陽	木
生物	てんとう虫	蛇

In addition, in S40, S41, and S42, instead of one keyword being chosen automatically, respectively, two or more keyword candidates may be chosen and it may be displayed on a screen. In this case, a user can choose the optimal keyword for the contents of the image from keyword candidates. The keyword chosen in S40, S41, or S42 is set up as additional information of image data (S43). Then, it progresses to S44.

[0026] In S44, it judges whether other additional information is inputted manually. In inputting other additional information manually as a result of decision, additional information is inputted by the user through a mouse 4 or keyboard 3 grade (S45), and it progresses to S46. The detail about the additional information input process in S45 is mentioned later. Moreover, in not inputting additional information manually by S44, it skips to S46. In S46, the image data to which additional information, such as a keyword, was added, or the image data to which additional information was not added is registered into hard disk drive unit 6 grade as a file of an image database.

[0027] As mentioned above, in the information processor concerning the gestalt of this operation, based on the contents classification information and characteristic quantity of image data, a keyword is chosen and this keyword is set as additional information. In addition, although automatic addition of a keyword was not performed in S39 with the gestalt of this operation when the vocabulary of contents classification information was not registered into the above-mentioned key list, the vocabulary of contents classification information is automatically registered into the above-mentioned key list, and you may make it set it as additional information also in such a case.

[0028] Drawing 6 is the flow chart of the incorporation processing (S35 of drawing 5) of image data mentioned above. In incorporation processing of this image data, image data is first incorporated from information record media, such as a picture input device of scanner 8 grade, or CD-ROM drive9b, (S351). Next, the contents classification information corresponding to the incorporated image data is inputted through input devices, such as a keyboard, (S352). Then, the storage place of image data is set up (S353), an image data name is inputted (S354), and a return is carried out after that. In addition, a user may specify contents classification information in this equipment instead of inputting the contents classification information of an image from input units, such as a keyboard and a mouse.

[0029] Drawing 7 is the flow chart of the additional information input process (S45 of drawing 5) mentioned above. In this additional information input process, first, an additional information input menu is displayed on a screen, and CPU201 judges whether processing [which] was chosen by the user. That is, it judges any should be chosen between the processing (S452) which adds a keyword as

additional information manually, or the processing (S453) which adds information other than a keyword as additional information. When neither of the processings is chosen, it progresses to S454. When addition of a keyword is chosen, keyword attached processing is performed (S452). The detail of this keyword attached processing is mentioned later. When attached processing of the information on other is chosen, attached processing of information other than a keyword is performed (S453). About attached processing of the information on other, fundamentally, since it is equivalent to the processing from the former, or keyword attached processing of S452, the detail is omitted. After the above attached processing is completed, it judges whether the input of this additional information is ended (S454), and the same actuation is repeated until a user terminates this attached processing.

[0030] Drawing 8 is a flow chart which shows the detail of attached processing (S452 of drawing 7) of a keyword. In this keyword attached processing, the keyword registered is displayed in a list first (this list display is called registration key list hereafter (S4521)). A user chooses a desired keyword out of the registration key list displayed on the screen (S4522). As the selection approach, cursor is moved to the location of a keyword by the approach a user clicks a keyword with a mouse 4, or the keyboard 3, and how to specify inverse video and by carrying out highlighting etc. can be considered. The keyword chosen by the user is set as the additional information of image data in S4523. Then, it is judged based on the input on the screen by the user whether attached processing of this keyword is ended (S4524), and the above-mentioned actuation is repeated until a user terminates this processing.

[0031] The flow chart concerning the gestalt of other operations of the data registration processing (S3 of drawing 4) mentioned above in drawing 9 is shown. If this data registration processing is started, it will judge whether the above CPU 201 performs data registration by the mode of operation in automatic key attachment mode first (S31'). As a result of judging, in YES, an automatic key attachment mode flag is set (S32'), and, in NO, an automatic key attachment mode flag is cleared (S33'). Next, it judges whether it is the new input of image data (S34'), and in YES, it progresses to incorporation processing (S35') of image data, and progresses after that to S37'. In S34', in NO, the existing image data is chosen (S36'), and it progresses to S37' after that.

[0032] If it belongs to the classification A an automatic key attachment flag judges whether it is ON in S37' to be, the contents classification of image data is judged to be in YES (S38'), and the contents classification is beforehand remembered to be by equipment, it belongs to Classification B to S39' and it belongs to Classification C to S42', it will progress to S44'. In having neither the case where it belongs to the other classification, nor contents classification information, it skips to S46'. In S39', characteristic quantity is calculated by Processing A. Similarly, in S42', characteristic quantity is calculated by Processing B, and is calculated by Processing C in S44'. these -- characteristic quantity -- each -- it -- henceforth -- processing -- S -- 40 -- ' -- S -- 43 -- ' -- S -- 45 -- ' -- setting -- a keyword -- presuming -- a sake -- using -- having -- for example, -- a hue -- lightness -- and -- saturation -- etc. -- a color -- being related -- characteristic quantity -- a profile -- an extract -- having carried out -- a configuration -- receiving -- fourier -- the expansion into series -- etc. -- technique -- using -- having evaluated -- a configuration -- being related -- characteristic quantity -- a base -- a pattern -- periodicity -- the -- a direction -- etc. -- a texture -- be related -- characteristic quantity -- etc. etc. -- thinking -- having . In S40', a keyword is presumed from the characteristic quantity calculated by S39' using the approach A of the convention defined beforehand. Similarly, in S43', a keyword is presumed from the characteristic quantity calculated S44 from the characteristic quantity calculated by S42' using Approach B using Approach C by S45'. Then, the keyword which progressed to S41' and was presumed is set as additional information.

[0033] With the gestalt of this operation, Classification B shall be given to the data of monochrome graphic forms, such as a notation, and texture data, such as a pattern, and Classification C shall be given to color picture data, such as a photograph, for Classification A, for example. In this case, as shown below, the characteristic quantity concerning [the characteristic quantity concerning / the characteristic quantity about a configuration / the data of Classification B to periodicity] the data of Classification C to a color is extracted from the data of Classification A again. A keyword can be given to image data using the key attachment function which analyzed beforehand and was specified according to each

classification.

[Table 2]

データ	分類	抽出特徴量[xi]	キー付け関数
モノクロ図形 (ex. 記号)	A	形状に関する特徴量 (輪郭抽出した形状に対しフーリエ級数 展開等の手法を用いて数値化した値)	f(xi)
テクスチャ (ex. 模様)	B	周期性に関する特徴量 (基本パターンの周期性、その方向等)	g(xi)
カラー画像 (ex. 写真)	C	色に関する特徴量 (色相、明度、彩度等)	h(xi)

Next, it judges whether other additional information is inputted manually (S46'), and in YES, additional information input process (S47') is performed, and it progresses to it after that to S48'. In step S48', the image data incorporated with additional information is kept to storage.

[0034] In addition, in the range which this invention is not limited to the gestalt of the above operation, and does not deviate from the summary, it cannot be overemphasized that various amelioration or modification on a design is possible.

[0035]

[Effect of the Invention] Since the search key added to an object is set up based on the contents classification information that the classification of not only the characteristic quantity showing the property of the proper of an object but its contents is expressed according to this invention, the search key according to the contents can be automatically added with a sufficient precision to the above-mentioned object. Consequently, the burdens of a search key addition activity are sharply reducible.

[Translation done.]

* NOTICES *

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the explanatory view showing the configuration of the information processor concerning the gestalt of this operation.

[Drawing 2] It is a block diagram centering on the control device in the above-mentioned information processor, and they are ** and **.

[Drawing 3] It is drawing showing the setting screen displayed on a display.

[Drawing 4] It is the flow chart of the main routine of the control processing in the above-mentioned control device.

[Drawing 5] It is the flow chart of data registration processing.

[Drawing 6] It is the flow chart of incorporation processing of image data.

[Drawing 7] It is the flow chart of additional information input process.

[Drawing 8] It is the flow chart of keyword attached processing.

[Drawing 9] It is the flow chart of the data registration processing concerning the gestalt of other operations of this invention.

[Description of Notations]

1 -- Control unit

3 -- Keyboard

5a -- Floppy disk

5b -- Floppy disk drive unit

6 -- Hard disk drive unit

8 -- Scanner

9a -- CD-ROM

9b -- CD-ROM equipment

201 -- CPU

203 -- ROM

204 -- RAM

[Translation done.]

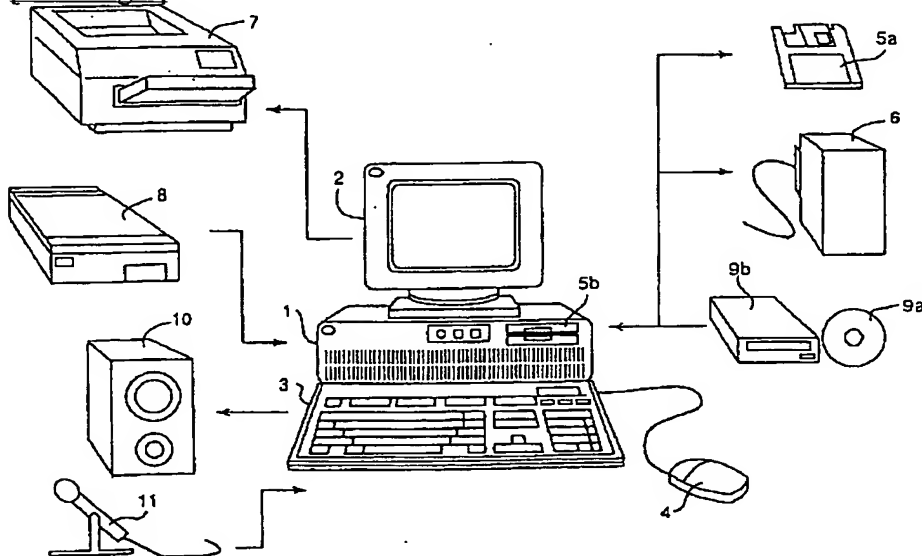
* NOTICES *

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

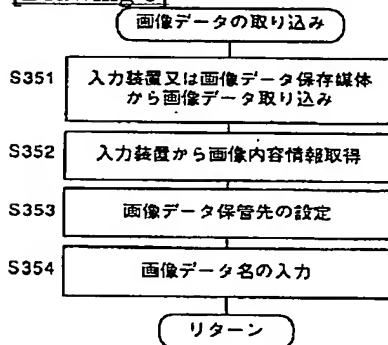
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

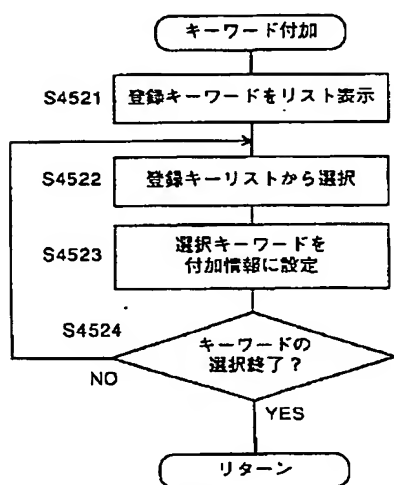
[Drawing 1]



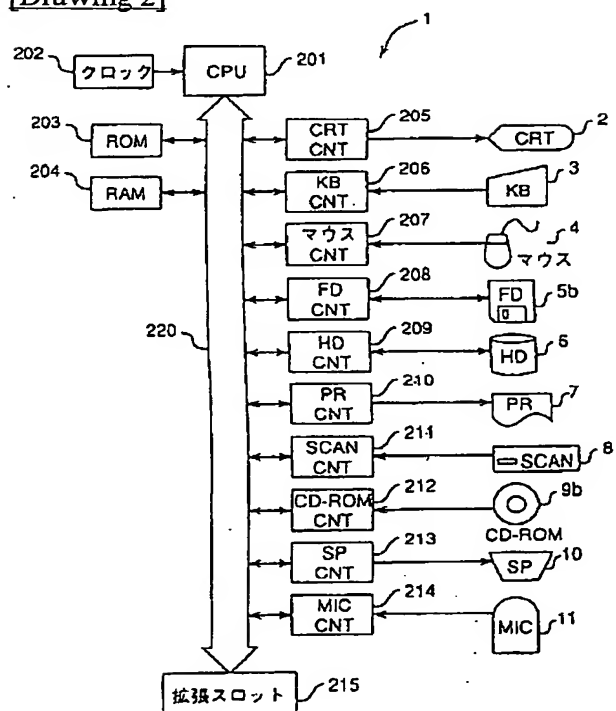
[Drawing 6]



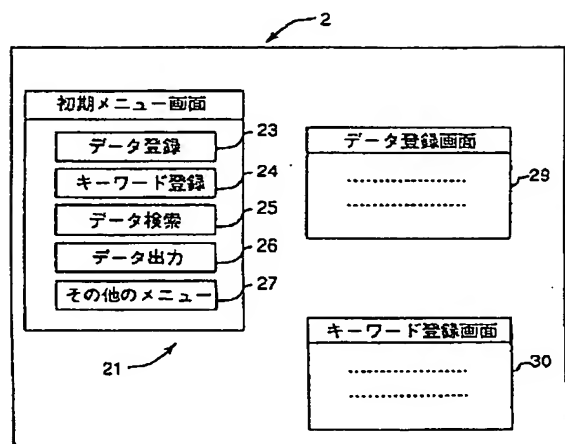
[Drawing 8]



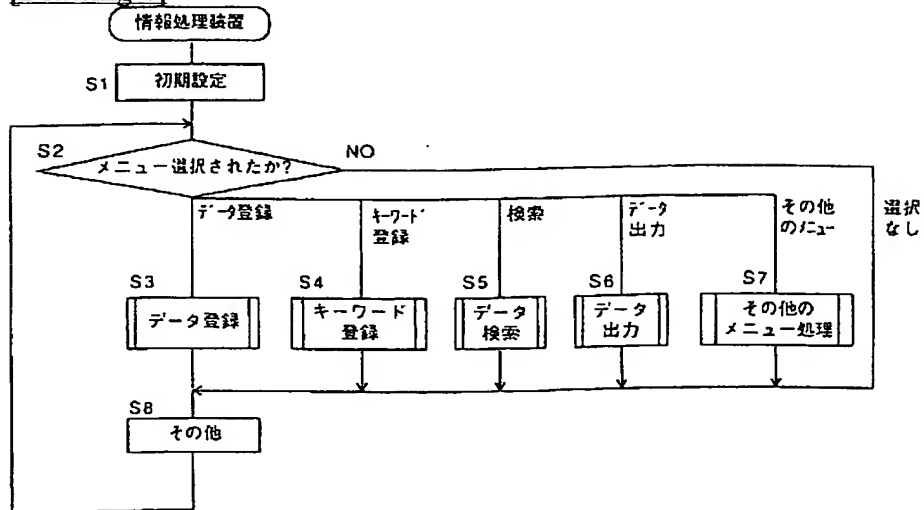
[Drawing 2]



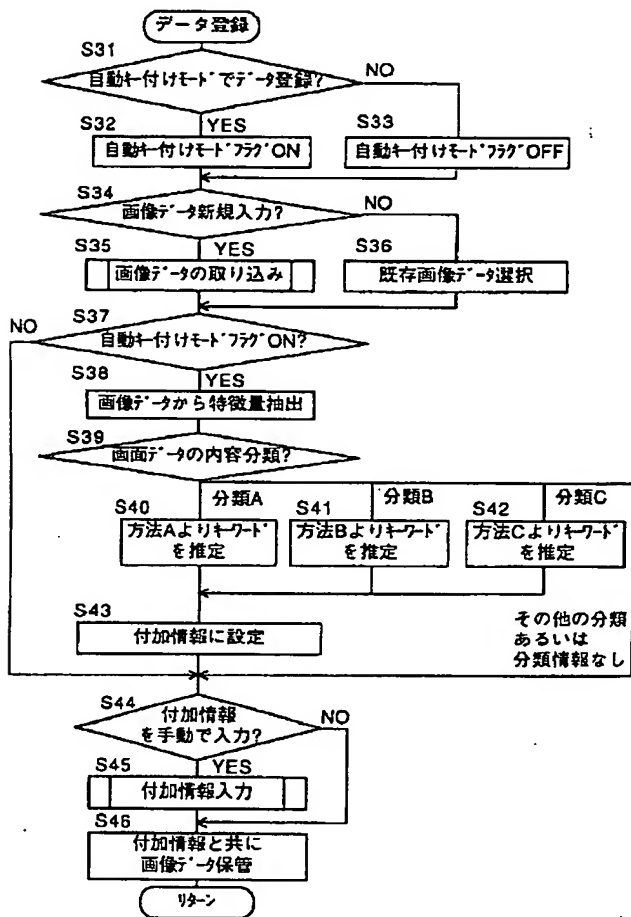
[Drawing 3]



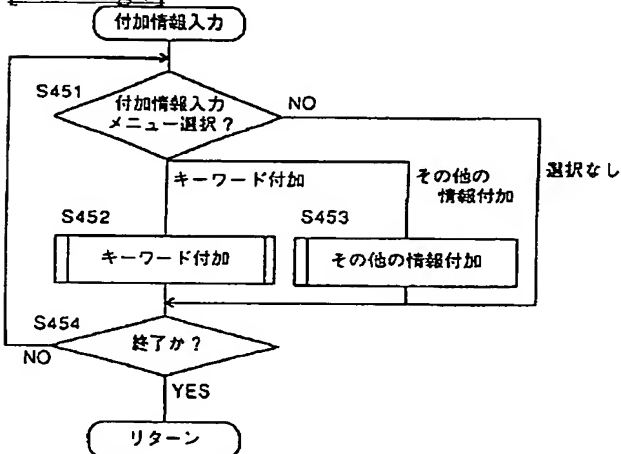
[Drawing 4]



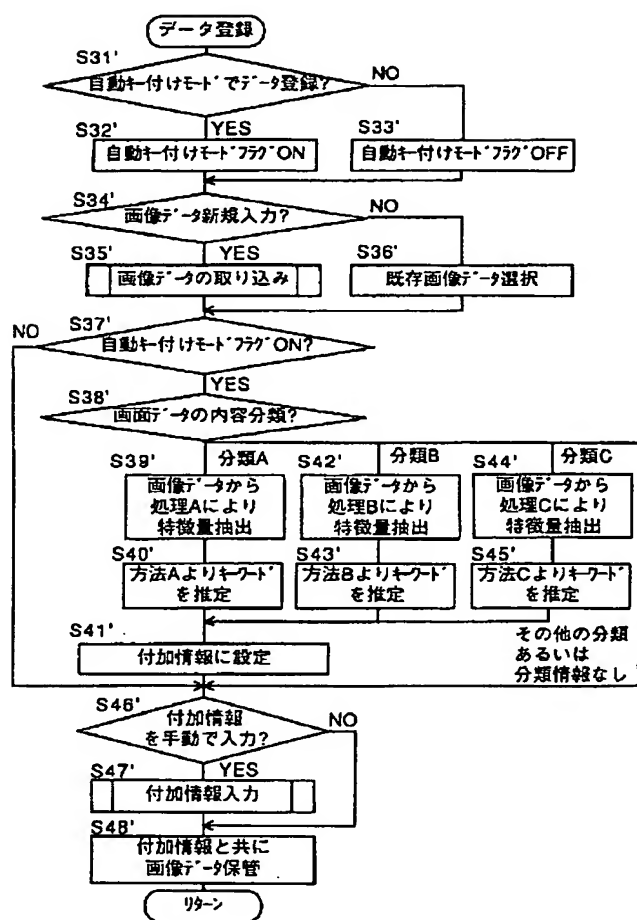
[Drawing 5]



[Drawing 7]



[Drawing 9]



[Translation done.]